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EXAMINER

MENBERU, BENIYAM

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2625

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/627,657	Applicant(s) NISHIKAWA ET AL.	
	Examiner BENIYAM MENBERU	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,12-18 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,12-18 and 20-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 6, 2009 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 10, and 20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1, 3, 4, and 6-9 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying

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subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101" – publicly available at USPTO.GOV, "memorandum to examining corp"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. In order for a process to be "tied" to another statutory category, the structure of another statutory category should be positively recited in a step or steps significant to the basic inventive concept, and NOT just in association with statements of intended use or purpose, insignificant pre or post solution activity, or implicitly.

Claim 1 disclose of a color processing method for determination of combination of color materials which includes an obtaining step, setting step, calculating step, and determining step. However these method steps are not tied to an actual machine or apparatus for performing theses steps.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1, 3, 6, 8, 9, 10, 12, 15, 17, 18, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. US2001/0035968 A1 to Higashikata et al in view of U.S. Patent No. 5739828 to Moriyama et al.

Regarding claim 1, Higashikata et al '968 discloses a color processing method of determining a combination of color material signals of a plurality of kinds of color materials for reproducing a color represented by an input color signal (page 7, paragraph 80, 81, 82; combination of YMCK value is determined based on input $L^*a^*b^*$), said method comprising the steps of:

obtaining a plurality of combinations of the plurality of kinds of color materials, each of the combinations being capable of reproducing a color represented by the input color signal (page 8, paragraph 91, 92, 93; plurality of K values corresponding to $L^*a^*b^*$ values are chosen to determine the combination of YMCK value to determine if it is below coverage restriction);

determining the combination of color material signals corresponding to the input color signal from the plurality of combinations of the plurality of kinds of color materials, based on the input color signal and the calculated total use amount of the color materials (page 8, paragraph 92, 93; page 9, paragraph 102, 103; the input $L^*a^*b^*$ is used to determine the optimized K value from plural K values (ie plural YMCK combinations) which determines the YMCK combination value; The restriction value "T" reads on the calculated total use amount since it is used to determine the appropriate K value to use to generate the YMCK combination; Figure 12 shows the function "T"). However

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Higashikata et al '968 does not disclose setting a function which is smooth and nonlinear and which represents a relation between a color signal and a total use amount of the color materials, based on a signal of a representative color and a total use amount of the color materials of the representative color and calculating the total use amount of the color materials corresponding to the input color signal by using the function.

Moriyama et al '828 discloses setting a function which is smooth and nonlinear and which represents a relation between a color signal and a total use amount of the color materials, based on a signal of a representative color and a total use amount of the color materials of the representative color (Figure 23 shows function labeled "d" which is smooth and non-linear which shows relation between D_{in} (input) and output D_{out} which represents volume ("total use amount"); column 9, lines 48-53; column 19, lines 51-67; column 20, lines 1-10, 34-46; the RGB color signal determines the volume (total use amount) of YMC color material) and calculating the total use amount of the color materials corresponding to the input color signal by using the function (column 19, lines 51-67; column 20, lines 1-10, 34-46; transforming function calculates the D_{out} by using the functions shows in Figure 23 based on input data D_{in}).

Having the system of **Higashikata et al '968** and then given the well-established teaching of **Moriyama et al '828**, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Higashikata et al '968** as taught by **Moriyama et al '828**, since **Moriyama et al '828** stated in col. 22, Lines 40-59, such a modification would provide high quality image output.

Regarding claim 3, Higashikata et al '968 in view of Moriyama et al '828 teaches all the limitations of claim 1. Further Higashikata et al '968 discloses color processing method as claimed in claim 1, wherein said step of determining the combination includes determining the combination corresponding to the input color signal with reference to a table (page 4, paragraph 52; K values are determined based on table storing parameters), which determines the combination of the plurality of kinds of color material so that the total use amount of the color materials is determined according to the combination of the plurality of kinds of color materials and meets the function for the total use amount within a range of for the input color signal (page 7, paragraph 79, 80, 81; optimal K value chosen in addition to the YMC value satisfies function for the total YMCK data shown in Figure 12; the solid curve in Figure 12 shows total YMCK data when optimal K is selected for generating the YMCK data (page 9, paragraph 102, 103); Figure 2 shows range of input $L^*a^*b^*$ values used for selecting K values (page 4, paragraph 44, 45, 46)).

Regarding claim 6, Higashikata et al '968 in view of Moriyama et al '828 teaches all the limitations of claim 1. Further Higashikata et al '968 discloses the color processing method as claimed in claim 1, wherein of the plurality of kinds of color materials comprise yellow, magenta, cyan, and black (page 3, paragraph 41; YMCK).

Regarding claim 8, Higashikata et al '968 in view of Moriyama et al '828 teaches all the limitations of claim 1. Further Higashikata et al '968 discloses the color

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processing method as claimed in claim 1, wherein the color materials comprise inks (page 1, paragraph 8).

Regarding claim 9, Higashikata et al '968 in view of Moriyama et al '828 teaches all the limitations of claim 1. Further Higashikata et al '968 discloses the color processing method as claimed in claim 1, wherein the color materials comprise toners (page 1, paragraph 8).

Regarding claim 10, see rejection of claim 1 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 renders obvious the apparatus of claim 10.

Regarding claim 12, see rejection of claim 3 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 renders obvious the apparatus of claim 12.

Regarding claim 15, see rejection of claim 6 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 renders obvious the apparatus of claim 15.

Regarding claim 17, see rejection of claim 8 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 renders obvious the apparatus of claim 17.

Regarding claim 18, see rejection of claim 9 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 renders obvious the apparatus of claim 18.

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Regarding claim 20, see rejection of claim 1 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 renders obvious the programming steps of claim 20.

Regarding claim 21, Higashikata et al '968 in view of Moriyama et al '828 teaches all the limitations of claim 1. Further Moriyama et al '828 discloses the color processing method as claimed in claim 1, wherein the representative color is a color having a highest saturation in each of hues of colors of the plurality of kinds of color materials (column 10, lines 61-67; column 11, lines 1-2, 17-25; input can be black which is highest saturation in black ink K or one of color Y, M, or C).

Regarding claim 22, Higashikata et al '968 in view of Moriyama et al '828 teaches all the limitations of claim 1. Further Higashikata et al '968 discloses color processing method as claimed in claim 1, wherein said determining step determines the combination of the color material signals by selecting a combination of the color material signals nearest to a combination of the color material signals corresponding to input color signal of the calculated total use amount, from the plurality of combinations of the plurality of kinds color materials (page 8, paragraph 92, 93; page 9, paragraph 102, 103; the input $L^*a^*b^*$ is used to determine the optimized K value from plural K values (ie plural YMCK combinations) which determines the YMCK combination value; The restriction value "T" reads on the calculated total use amount since it is used to determine the appropriate K value to use to generate the YMCK combination; Figure 12 shows the function "T"; As shown in Figure 12, when L^* is close to 0, the selected combination of YMCK has total use amount which gets nearer and nearer to the

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coverage restriction T wherein the coverage restriction T can represent a combination of color materials which is maximum coverage.).

Regarding claim 23, see rejection of claim 21 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 renders obvious the apparatus of claim 23.

Regarding claim 24, see rejection of claim 22 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 renders obvious the apparatus of claim 24.

7. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. US2001/0035968 A1 to Higashikata et al in view of U.S. Patent No. 5739828 to Moriyama et al further in view of U.S. Patent No. 7190485 to Couwenhoven et al.

Regarding claim 4, Higashikata et al '968 in view of Moriyama et al '828 teaches all the limitations of claim 1. However Higashikata et al '968 in view of Moriyama et al '828 does not disclose a color processing method as claimed in claim 1, wherein the function is a spline function.

Couwenhoven et al '485 discloses a color processing method wherein the function is a spline function (column 4, lines 39-50; column 8, lines 33-41, 52-66; spline curve used for volume (total amount) function).

Having the system of ***Higashikata et al '968 in view of Moriyama et al '828*** and then given the well-established teaching of ***Couwenhoven et al '485***, it would have

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been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of *Higashikata et al '968 in view of Moriyama et al '828* as taught by *Couwenhoven et al '485*, since *Couwenhoven et al '485* stated in col. 8, Lines 55-66, such a modification would provide ink volume data at arbitrary input code value through use of interpolation.

Regarding claim 13 see rejection of claim 4 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485 renders obvious the apparatus of claim 13.

8. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. US2001/0035968 A1 to Higashikata et al in view of U.S. Patent No. 5739828 to Moriyama et al further in view of U.S. Patent No. 7190485 to Couwenhoven et al further in view of U.S. Patent No. 6058207 to Tuijin et al further in view of U.S. Patent No. 7102785 to Tamagawa.

Regarding claim 5, Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485 teaches all the limitations of claim 4. However Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485 does not disclose color processing method as claimed in claim 4, wherein said step of setting the function includes displaying a function for a total use amount for a predetermined color on a display device.

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Tuijin et al '207 discloses displaying a function for a total use amount for a predetermined color on a display device (column 6, lines 57-67; column 7, lines 1-12; "Total ink value" is displayed.).

Having the system of ***Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485*** and then given the well-established teaching of ***Tuijin et al '207***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485*** as taught by ***Tuijin et al '207***, since ***Tuijin et al '207*** stated in column 3, lines 6-21, such a modification would provide flexibility for color correction.

However Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485 does not disclose setting the function based on input by an operation on the display.

Tamagawa '785 discloses setting the function based on input by an operation on the display (Figure 22; column 14, lines 48-67; column 15, lines 1-3; Operator enters the smoothing range.).

Having the system of ***Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485*** and then given the well-established teaching of ***Tamagawa '785***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485*** as taught

by ***Tamagawa '785***, since ***Tamagawa '785*** stated in column 2, lines 3-35, such a modification would provide compensation for artifact in the color profile generation.

Regarding claim 14, see rejection of claim 5 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 further in view of Couwenhoven et al '485 further in view of Tuijin et al '207 further in view of Tamagawa '785 renders obvious the apparatus of claim 14.

9. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. US2001/0035968 A1 to Higashikata et al in view of U.S. Patent No. 5739828 to Moriyama et al further in view of U.S. Patent No. 6172692 to Huang et al.

Regarding claim 7, Higashikata et al '968 in view of Moriyama et al '828 teaches all the limitations of claim 1. However Higashikata et al '968 in view of Moriyama et al '828 does not disclose the color processing method as claimed in claim 1, wherein the plurality of kinds of color materials comprise yellow, magenta, cyan, black, and light magenta, having lower concentration than the magenta, and light cyan, having lower concentration than the cyan.

Huang et al '692 discloses wherein the plurality of kinds of color materials comprise yellow, magenta, cyan, black, and light magenta, having lower concentration than the magenta, and light cyan, having lower concentration than the cyan (column 6, lines 62-67; column 7, lines 10-15; diluted reads on lower concentration).

Having the system of ***Higashikata et al '968 in view of Moriyama et al '828*** and

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then given the well-established teaching of **Huang '692**, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Higashikata et al '968 in view of Moriyama et al '828** as taught by **Huang '692**, since **Huang '692** stated in col. 1, Lines 19-32, such a modification would provide the color material for generating photograph type images.

Regarding claim 16, see rejection of claim 7 as shown above. The method of Higashikata et al '968 in view of Moriyama et al '828 further in view of Huang '692 renders obvious the apparatus of claim 16.

Other Prior Art Cited

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6081344 to Bockman et al disclose halftoning method.

U.S. Patent No. 6169609 to Jacob et al disclose color data processing.

U.S. Patent No. 6997543 to DeBaer discloses printing system.

U.S. Patent No. 6808244 to Rosenberger et al disclose printer.

U.S. Patent No. 6435657 to Couwenhoven et al disclose colorant correction.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENIYAM MENBERU whose telephone number is (571) 272-7465. The examiner can normally be reached on 8:00AM-4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600. The group receptionist number for TC 2600 is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Beniyam Menberu

/Beniyam Menberu/
Examiner, Art Unit 2625

06/18/2009

/David K Moore/

Supervisory Patent Examiner, Art Unit 2625